



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
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Tel (613) 632-5200
Fax 613 632-5246

C60-C
Job Sheet 195907



Part No: C60-C

Job Qty: 1 pcs

Part Name: Single Cage



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 5/31/19

Job Tracking No:

Due Date: 7/16/19

Created By: Marie Lajeunesse

Type: SOLD

Description: *Handwritten: 164/83*

Note: C60-C REV:3 IPP REV:A 18.02.02 NEW ISSUE DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	External Load - Issue SN	1 pcs	7/16/19		0.00	0.50	External Load - 1		AUG 16 2019
							External Load - 2		
							External Load - 3		
110	External Load - 2 - B4B	1 pcs	7/16/19		0.00	0.50	External Load - 1 - B4B		<i>Multi 2019-8-16</i>
							External Load - 2 - B4B		
							External Load - 3 - B4B		
120	QC 5	1 pcs	7/16/19		0.00	0.00	QC 5 - 10		DAS 30 9-89
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
130	Packaging 3-1 - Stock - B4B	1 pcs	7/16/19		0.00	0.00	Packaging 3 - 1 - B4B		DAS 30 9-89
							Packaging 3 - 2 - B4B		
							Packaging 3 - 3 - B4B		
							Packaging 3 - 4 - B4B		
							Packaging 3 - 5 - B4B		
							Packaging 3 - 6 - B4B		
							Packaging 3 - 7 - B4B		
							Packaging 3 - 8 - B4B		

					Packaging 3 - 9 - B4B					
					Packaging 3 - 10 - B4B					
					Packaging 3 - 11 - B4B					
					Packaging 3 - 12 - B4B					
					Packaging 3 - 13 - B4B					
					Packaging 3 - 14 - B4B					
					Packaging 3 - 15 - B4B					
					Packaging 3 - 16 - B4B					
					Packaging 3 - 17 - B4B					
					Packaging 3 - 18 - B4B					
					Packaging 3 - 19 - B4B					
					Packaging 3 - 20 - B4B					
					Packaging 3 - 21 - B4B					
					Packaging 3 - 22 - B4B					
					Packaging 3 - 23 - B4B					
					Packaging 3 - 24 - B4B					
					Packaging 3 - 25 - B4B					
					Packaging 3 - 26 - B4B					
					Packaging 3 - 27 - B4B					
					Packaging 3 - 28 - B4B					
					Packaging 3 - 29 - B4B					
					Packaging 3 - 30 - B4B					
					Packaging 3 - 31 - B4B					
					Packaging 3 - 32 - B4B					
					Packaging 3 - 33 - B4B					
					Packaging 3 - 34 - B4B					
					Packaging 3 - 35 - B4B					
					Packaging 3 - 36 - B4B					
					140 QC 21 - SA	1 pcs	7/16/19	0.00 0.00	QC 21 - SA - 21	
									QC 21 - SA - 70	
									QC 21 - SA - 53	

AUG 1 8 2019

Part Op 100 - Issue S/N

Descriptions: 110 - (Small Fab) ASSEMBLE AS PER DWG ***HAND TIGHT ALL BOLTS, SPREAD CUTTER PIN JUST ENOUGH THAT IT THOSE NOT FALL OFF***

130 - (Identify as per dwg & Stock Location: _____)

140 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
AN12H32	Bolt	1 pcs (1 ea)	100-External Load - Issue SN	5159804
91257A750	Cage Bolt	2 pcs (2 ea)	110-External Load - 2 - B4B	3179085
AN310-12	Castellated Nut	1 pcs (1 ea)	110-External Load - 2 - B4B	5004855
C45-15-11	Nut, Cage Bumper	1 Ea (1 ea)	110-External Load - 2 - B4B	5085248
C45-15-11	Nut, Cage Bumper	1 Ea (1 ea)	110-External Load - 2 - B4B	5200381
C45-15-5	Nut, Cage Bolt	2 (2 ea)	110-External Load - 2 - B4B	5180462
C45-15-6	Bushing, Lifting	1 pcs (1 ea)	110-External Load - 2 - B4B	5111647
C45-15-7	Washer, Lifting Bolt	2 pcs (2 ea)	110-External Load - 2 - B4B	5179117
C45-18-7	Shim	4 Ea (4 ea)	110-External Load - 2 - B4B	5192231
C60-19C	Weldment	1 pcs (1 ea)	110-External Load - 2 - B4B	5092509-1
MS24865-363	Cotter Pin	1 Ea (1 ea)	110-External Load - 2 - B4B	5076016-1
NAS1149C0663R	Washer	1 Ea (1 ea)	110-External Load - 2 - B4B	5058169
NAS1149F0863P	Washer	4 Ea (4 ea)	110-External Load - 2 - B4B	5197173

C45-15-10

Bumper

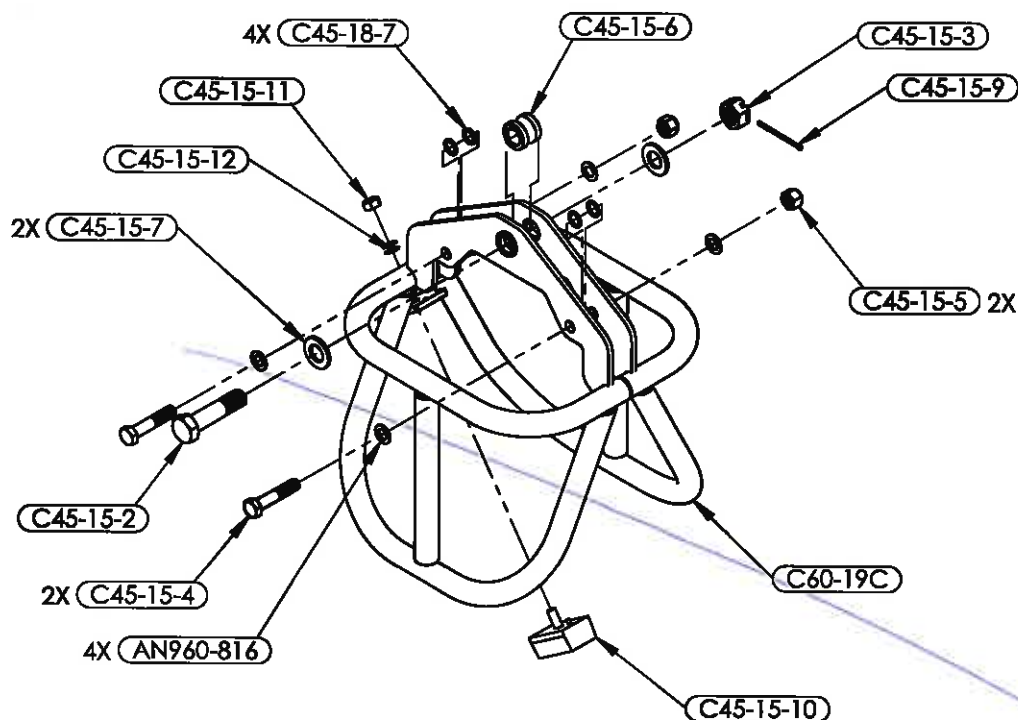
1

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-External Load - Issue SN	AN12H32	1	44	0
110-External Load - 2 - B4B	91257A750	2	10	0
	AN310-12	1	26	0
	C45-15-11	2	78	0
	C45-15-5	2	0	0
	C45-15-6	1	27	0
	C45-15-7	2	61	0
	C45-18-7	4	38	0
	C60-19C	1	2	0
	MS24665-363	1	79	0
	NAS1149C0663R	1	487	0
	NAS1149F0863P	4	682	0
Part Specifications				
Specifications could not be found.				

Plex 5/31/19 2:51 PM Dart.lajeunesse.marie

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
2		AS DRAWN BY APICAL	11/6/2012	JAG
3	15-0181	UPDATED TO NEW DRAFTING STANDARDS. CH'D P/N WAS C45-15-8 IS AN960-816. C45-18-7 ADDED TO BOM QTY 4.	7/22/2015	DPD JAG



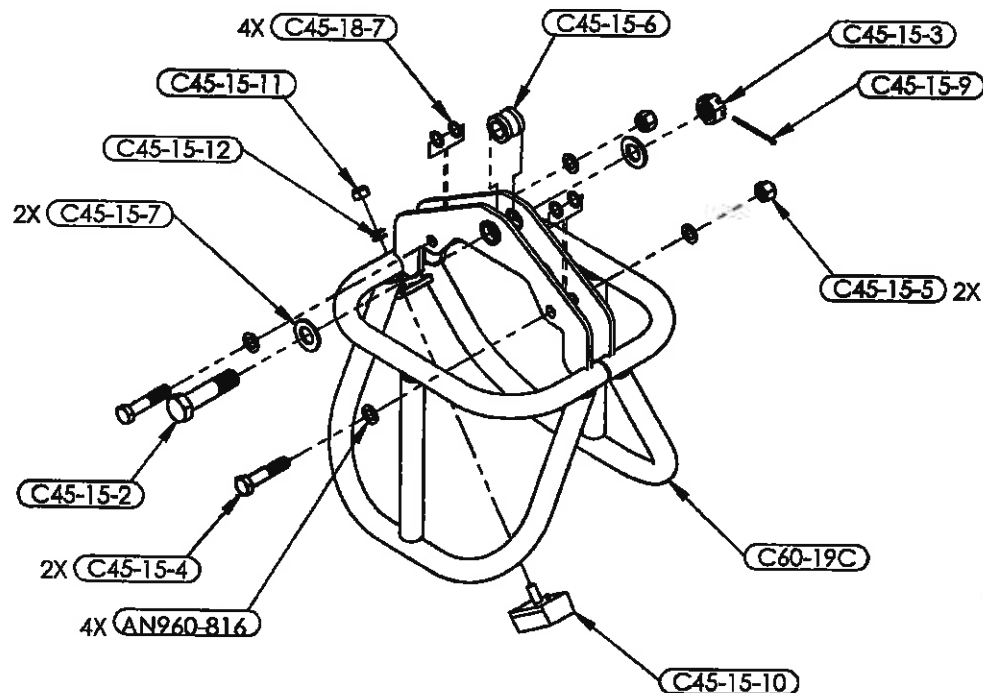
SHOP COPY
RETURN TO
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 195907 HUS
19-06-03

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS
			C60-19C	1	WELDMENT		
			C45-15-2	1	LIFTING BOLT	STEEL	
		B/O	C45-15-3	1	CASTLE NUT	STEEL	3/4-16 (MCMASTER-CARR #95030A270)
		B/O	C45-15-4	2	CAGE BOLT	STEEL	1/2-20 X 2-1/2, GRADE 8 (MCMASTER-CARR #91257A750)
		B/O	C45-15-5	2	CAGE BOLT NUT	STEEL	1/2-20 LOCKNUT, GRADE 8 (MCMASTER-CARR #97135A255)
			C45-15-6	1	LIFTING BUSHING	4140/4142	
		B/O	C45-15-7	2	LIFTING BOLT WASHER	STEEL	3/4 (MCMASTER-CARR #98023A036)
		B/O	C45-15-9	1	COTTER PIN	S.S	Ø1/8 X 2-1/2 (MCMASTER-CARR #98401A481)
			C45-15-10	1	FORD BUMPER		
		B/O	C45-15-11	1	CAGE BUMPER NUT	STEEL	M10, CLASS 8 (MCMASTER-CARR #90576A118)
		B/O	C45-15-12	1	CAGE BUMPER WASHER	STEEL	3/8 (MCMASTER-CARR #91074A131)
		B/O	C45-18-7	4	SHIM	STEEL	.025 X Ø.511 I.D. (MCMASTER-CARR #3088A412)
		B/O	AN960-816	4	LIFTING BOLT WASHER	STEEL	Ø1/2

		TITLE	
		C60 CAGE	
DWG NO.		REV	
C60-C		3	
MATERIAL		DRAWN BY: APICAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED <i>D. Weil</i>	
.XXX ± .005 .XX ± .01 .X ± .1		HEAT TREAT FINISH	
FRACTIONS ± 1/8 ANGLES ± 5°		SPEC	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		USED ON MODEL	
2. DIMENSIONAL LIMITS APPLY AFTER PLATING			
SCALE	1:8	DATE	2/15/2002
		SHEET 1 OF 1	

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REVISIONS				DATE	INITIAL	APPROVED
REV	ECR	DESCRIPTION				
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3	15-0181	UPDATED TO NEW DRAFTING STANDARDS. CHD P/N WAS C45-15-8 IS AN960-816. C45-18-7 ADDED TO BOM QTY 4.		7/22/2015	DPD	JAG
D	19-660	Replaced B/O information for C45-15-2, C45-15-3 and C45-15-9. C45-15-12		04/12/2019	<i>ML</i>	ML



SEE ATTACHED DEVIATION

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS
			C60-19C	1	WELDMENT		
			C45-15-2	1	LIFTING BOLT	STEEL	AN12H32
		B/O	C45-15-3	1	CASTLE NUT	STEEL	AN310-12
		B/O	C45-15-4	2	CAGE BOLT	STEEL	1/2-20 X 2-1/2, GRADE 8 (MCMASTER-CARR #91257A750)
		B/O	C45-15-5	2	CAGE BOLT NUT	STEEL	1/2-20 LOCKNUT, GRADE 8 (MCMASTER-CARR #97135A255)
			C45-15-6	1	LIFTING BUSHING	4140/4142	
		B/O	C45-15-7	2	LIFTING BOLT WASHER	STEEL	3/4 (MCMASTER-CARR #98023A036)
		B/O	C45-15-9	1	COTTER PIN	S.S.	MS24665-363
			C45-15-10	1	FORD BUMPER		
		B/O	C45-15-11	1	CAGE BUMPER NUT	STEEL	M10, CLASS 8 (MCMASTER-CARR #90576A118)
		B/O	C45-15-12	1	CAGE BUMPER WASHER	STEEL	NAS1149C0663R
		B/O	C45-18-7	4	SHIM	STEEL	.025 X 0.511 LD. (MCMASTER-CARR #3088A412)
		B/O	AN960-816	4	LIFTING BOLT WASHER	STEEL	AN960-816 (NAS1149F0863P)

DART AEROSPACE																									
C60 CAGE																									
C60-C																									
REV D																									
<table border="0"> <tr> <td>MAT'L</td> <td>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</td> <td>DRAWN BY: APICAL</td> </tr> <tr> <td></td> <td> <table border="0"> <tr> <td>JXX ± .005</td> <td>FRACTIONS ± 1/8</td> <td>APPROVED <i>ML</i></td> </tr> <tr> <td>JX ± .01</td> <td>ANGLES ± 5°</td> <td></td> </tr> <tr> <td>JX ± .1</td> <td></td> <td></td> </tr> </table> </td> <td></td> </tr> <tr> <td colspan="3">1. BREAK ALL SHARP EDGES .015 x 45°</td> </tr> <tr> <td colspan="3">2. DIMENSIONAL LIMITS APPLY AFTER PLATING</td> </tr> <tr> <td>SCALE 1:8</td> <td>DATE 04/12/2019</td> <td>SHEET 1 OF 1</td> </tr> </table>		MAT'L	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAWN BY: APICAL		<table border="0"> <tr> <td>JXX ± .005</td> <td>FRACTIONS ± 1/8</td> <td>APPROVED <i>ML</i></td> </tr> <tr> <td>JX ± .01</td> <td>ANGLES ± 5°</td> <td></td> </tr> <tr> <td>JX ± .1</td> <td></td> <td></td> </tr> </table>	JXX ± .005	FRACTIONS ± 1/8	APPROVED <i>ML</i>	JX ± .01	ANGLES ± 5°		JX ± .1				1. BREAK ALL SHARP EDGES .015 x 45°			2. DIMENSIONAL LIMITS APPLY AFTER PLATING			SCALE 1:8	DATE 04/12/2019	SHEET 1 OF 1
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DART
AEROSPACE

Container No: S206276



Part: C60-C
Job No: 195907
Serial No/Batch: S206276
Revision: D
Inspector:
Exp Date:
Instructions:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 119 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 0 /10/19

Entered: YREDate: Oct 21/19.NCR No. 19-7432

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only ☐Job: 195907Part No. C60-C REV D

DISPOSITION

Rework ☐Scrap ☐Use-as-is ☒

DEPARTMENT/PROCESS

Skid-tube ☐Machining ☐Large Fab ☐Cross tube ☐Small Fab ☒Finishing ☐Eng. (Non-AW) ☐Prod. Eng. Coord. ☐Rec/Store/Packaging ☐Engineering ☐Water Jet ☐Supplier ☐Quality ☐Date: 2019-06-12

Sequence #:

QTY Affected: 1

MRB (QSI042)

Description Work Order Deviation

Disposition

ITEM C45-15-5 REPLACED BY
MS21044N8THIS DEVIATION IS ACCEPTABLE
TO USE AS ISFIT, FORM AND FUNCTION WILL
BE AS ORIGINALLY INTENDED

Completed By

A Patry

Lead hand / Supervisor

DAS
30
9-89

OCT 11 2019

QC / QA Coordinator

DAS
68
9-89

OCT 11 2019

Root Cause

Operator ☐Manufacturing Process ☒Equip/Tooling ☐Handling/Preservation ☐Material ☐Product Improvement ☐Process Improvement ☐Human Factors ☐

FAULT CATEGORY

☐ Pressure/Forced☐ Bending☐ Crushing☐ Cracks☐ Crimp/Kink/Ripple/Wave/Twist☐ Marks/Chatter☐ Mislabeled☐ Contamination☐ Misaligned/off center☐ BOM/Route☐ Broken/Damage/Defect☐ Incomplete/Unclear Instructions☐ Drill Holes☐ Fit/Function☐ Power Loss/Surge☐ Follo/Program☐ Grain Direction☐ Weld☐ Wrong Stock Pulled☐ Out of Sequence☐ Off-set/Set-up☐ Positioned Wrong☐ Outside Tolerance☒ Drawing☐ Finish☐ Part Lost/Missing☐ Misread

Other/Details: